

PATENT
Attorney Docket No. 81274A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
CHARLES S. MUNN ET AL.)
Serial No.: Unassigned) Prior Application
Filed: Herewith) Group Art Unit: 1772
For: RUBBERY PRODUCTS THAT) Prior Application
SHRINK DUE TO THE) Examiner: R. Dye
APPLICATION OF ENERGY)
AND HYPO-ALLERGENIC)
RUBBERY PRODUCTS)

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

PRELIMINARY AMENDMENT

Prior to examining the above-identified application, please enter the amendment below.

IN THE SPECIFICATION:

Please amend the specification as follows:

Page 1, line 11, after "application" and before "claims" insert --is a continuation of U.S. Patent Application Serial No. 08/907,100, filed August 6, 1997, which in turn--; and

Page 1, line 14, replace " _____ " with --60/054,051--;

IN THE CLAIMS:

Please cancel claims 7 and 12 without prejudice or disclaimer of the subject matter thereof and please amend claims 1-5, 16, 19, 22-26, 28, 31-34 and 37-38 as follows:

1. (Amended) A rubbery material having a first shape and size, a second shape and size, and a transition temperature, wherein the rubbery material shrinks from the second shape and size toward the first shape and size after the application of energy to the rubbery material where the application of energy is equivalent in result to raising the rubbery material's temperature to at least the transition temperature wherein the rubbery material comprises a substance selected from the group consisting of trans pentenamer and its copolymers, ethylene pimelate and its copolymers, trans-1,4-polybutadiene and its copolymers, and synthetic cis-1,4-polyisoprene and its copolymers.

2. (Amended) The rubbery material as set forth in claim 1, wherein the rubbery material is used in a condom [and the transition temperature is in the range of 94 to 99 degrees Fahrenheit].

3. (Amended) [The rubbery material as set forth in claim 1, wherein the rubbery material is used in a] A glove comprising a rubbery material having a first shape and size, a second shape and size, and a transition temperature, wherein the rubbery material shrinks from the second shape and size toward the first shape and size after application of energy to the rubbery material where the application of energy is equivalent in result to raising the rubbery material's temperature to at least the transition temperature wherein the rubbery material comprises a substance selected from the group consisting of trans pentenamer and its copolymers, ethylene pimelate and its copolymers, trans-1,4-polybutadiene and its copolymers, and synthetic cis-1,4-polyisoprene and its copolymers.

4. (Amended) The rubbery material as set forth in claim 1, wherein the rubbery material is used in a condom portion of a condom-catheter.

5. (Amended) A method for the manufacture and use of a rubbery material having a transition temperature, the method comprising the steps of:

- (i) manufacturing and cross-linking the rubbery material to a first shape and size, the rubbery material comprising a substance selected from the group consisting of trans pentenamer and its copolymers, ethylene pimelate and its copolymers, trans-1,4-polybutadiene and its copolymers, and synthetic cis-1,4-polyisoprene and its copolymers;
- (ii) after performing step (i), applying energy to the rubbery material, where the application of energy is equivalent in result to raising the rubbery material's temperature to at least the transition temperature;
- (iii) after performing step (i), stretching the rubbery material to a second shape and size; wherein steps (ii) and (iii) are performed in such a way that the rubbery material is in a state in which it is both in the second shape and size and its effective temperature is at least the transition temperature; and
- (iv) after steps (ii) and (iii) have been performed, reducing the effective temperature of the rubbery material below the transition temperature while the rubbery material is kept in the second shape and size so that the rubbery material remains in the second shape and size until subsequent application of energy to the rubbery material equivalent in result to raising its temperature to at least the transition temperature whereupon the rubbery material shrinks from the second shape and size toward the first shape and size.

16. (Amended) A condom comprising a rubbery material having a transition temperature, said condom being made [according to the method as set forth in any one of claims 7-13] by a method comprising the steps of:

- (i) manufacturing and cross-linking the rubbery material to a first shape and size, the rubbery material comprising a substance selected from the group consisting of polyurethane

elastomers and their copolymers, trans pentenamer and its copolymers, ethylene pimelate and its copolymers, trans-1,4-polybutadiene and its copolymers, and synthetic cis-1,4-polyisoprene and its copolymers;

(ii) after performing step (i), applying energy to the rubbery material, where the application of energy is equivalent in result to raising the rubbery material's temperature to at least the transition temperature;

(iii) after performing step (i), stretching the rubbery material to a second shape and size, wherein steps (ii) and (iii) are performed in such a way that the rubbery material is in a state in which it is both in the second shape and size and its effective temperature is at least the transition temperature; and

(iv) after steps (ii) and (iii) have been performed, reducing the effective temperature of the rubbery material below the transition temperature while the rubbery material is kept in the second shape and size so that the rubbery material remains in the second shape and size until subsequent application of energy to the rubbery material equivalent in result to raising its temperature to at least the transition temperature whereupon the rubbery material shrinks from the second shape and size toward the first shape and size.

19. (Amended) A glove comprising a rubbery material having a transition temperature, said glove being made [according to the method as set forth in any one of claims 7-13] by a method comprising the steps of:

(i) manufacturing and cross-linking the rubbery material to a first shape and size, the rubbery material comprising a substance selected from the group consisting of trans pentenamer and

its copolymers, ethylene pimelate and its copolymers, trans-1,4-polybutadiene and its copolymers,
and synthetic cis-1,4-polyisoprene and its copolymers;

(ii) after performing step (i), applying energy to the rubbery material, where the
application of energy is equivalent in result to raising the rubbery material's temperature to at least
the transition temperature;

(iii) after performing step (i), stretching the rubbery material to a second shape and
size, wherein steps (ii) and (iii) are performed in such a way that the rubbery material is in a state in
which it is both in the second shape and size and its effective temperature is at least the transition
temperature; and

(iv) after steps (ii) and (iii) have been performed, reducing the effective temperature
of the rubbery material below the transition temperature while the rubbery material is kept in the
second shape and size so that the rubbery material remains in the second shape and size until
subsequent application of energy to the rubbery material equivalent in result to raising its
temperature to at least the transition temperature whereupon the rubbery material shrinks from the
second shape and size toward the first shape and size.

22. (Amended) A condom-catheter comprising a rubbery material having a transition
temperature, said condom-catheter being made [according to the method as set forth in any one of
claims 7-13] by a method comprising the steps of:

(i) manufacturing and cross-linking the rubbery material to a first shape and size, the
rubbery material comprising a substance selected from the group consisting of polyurethane
elastomers and their copolymers, trans pentenamer and its copolymers, ethylene pimelate and its

copolymers, trans-1,4-polybutadiene and its copolymers, and synthetic cis-1,4-polyisoprene and its copolymers:

(ii) after performing step (i), applying energy to the rubbery material, where the application of energy is equivalent in result to raising the rubbery material's temperature to at least the transition temperature;

(iii) after performing step (i), stretching the rubbery material to a second shape and size, wherein steps (ii) and (iii) are performed in such a way that the rubbery material is in a state in which it is both in the second shape and size and its effective temperature is at least the transition temperature; and

(iv) after steps (ii) and (iii) have been performed, reducing the effective temperature of the rubbery material below the transition temperature while the rubbery material is kept in the second shape and size so that the rubbery material remains in the second shape and size until subsequent application of energy to the rubbery material equivalent in result to raising its temperature to at least the transition temperature whereupon the rubbery material shrinks from the second shape and size toward the first shape and size.

23. (Amended) [A] An oral-dental dam made according to the method set forth in claim 5.

24. (Amended) [A] An oral-dental dam made and used according to the method set forth in claim 6.

25. (Amended) [A] An oral-dental dam comprising a rubbery material having a transition temperature, said oral-dental dam being made [according to the method as set forth in any one of claims 7-13] by a method comprising the steps of:

(i) manufacturing and cross-linking the rubbery material to a first shape and size, the rubbery material comprising a substance selected from the group consisting of polyurethane elastomers and their copolymers, trans pentenamer and its copolymers, ethylene pimelate and its copolymers, trans-1,4-polybutadiene and its copolymers, and synthetic cis-1,4-polyisoprene and its copolymers;

(ii) after performing step (i), applying energy to the rubbery material, where the application of energy is equivalent in result to raising the rubbery material's temperature to at least the transition temperature;

(iii) after performing step (i), stretching the rubbery material to a second shape and size, wherein steps (ii) and (iii) are performed in such a way that the rubbery material is in a state in which it is both in the second shape and size and its effective temperature is at least the transition temperature; and

(iv) after steps (ii) and (iii) have been performed, reducing the effective temperature of the rubbery material below the transition temperature while the rubbery material is kept in the second shape and size so that the rubbery material remains in the second shape and size until subsequent application of energy to the rubbery material equivalent in result to raising its temperature to at least the transition temperature whereupon the rubbery material shrinks from the second shape and size toward the first shape and size.

26. (Amended) A wound cover comprising a rubbery material having a transition temperature, said wound cover being made [according to the method as set forth in any one of claims 5 or 7-13] by a method comprising the steps of:

(i) manufacturing and cross-linking the rubbery material to a first shape and size, the rubbery material comprising a substance selected from the group consisting of polyurethane elastomers and their copolymers, trans pentenamer and its copolymers, ethylene pimelate and its copolymers, trans-1,4-polybutadiene and its copolymers, and synthetic cis-1,4-polyisoprene and its copolymers;

(ii) after performing step (i), applying energy to the rubbery material, where the application of energy is equivalent in result to raising the rubbery material's temperature to at least the transition temperature;

(iii) after performing step (i), stretching the rubbery material to a second shape and size, wherein steps (ii) and (iii) are performed in such a way that the rubbery material is in a state in which it is both in the second shape and size and its effective temperature is at least the transition temperature; and

(iv) after steps (ii) and (iii) have been performed, reducing the effective temperature of the rubbery material below the transition temperature while the rubbery material is kept in the second shape and size so that the rubbery material remains in the second shape and size until subsequent application of energy to the rubbery material equivalent in result to raising its temperature to at least the transition temperature whereupon the rubbery material shrinks from the second shape and size toward the first shape and size.

28. (Amended) A surgical field delimiter comprising a rubbery material having a transition temperature, said surgical field delimiter being made [according to the method as set forth in any one of claims 5 or 7-13] by a method comprising the steps of:

(i) manufacturing and cross-linking the rubbery material to a first shape and size, the rubbery material comprising a substance selected from the group consisting of polyurethane elastomers and their copolymers, trans pentenamer and its copolymers, ethylene pimelate and its copolymers, trans-1,4-polybutadiene and its copolymers, and synthetic cis-1,4-polyisoprene and its copolymers;

(ii) after performing step (i), applying energy to the rubbery material, where the application of energy is equivalent in result to raising the rubbery material's temperature to at least the transition temperature;

(iii) after performing step (i), stretching the rubbery material to a second shape and size, wherein steps (ii) and (iii) are performed in such a way that the rubbery material is in a state in which it is both in the second shape and size and its effective temperature is at least the transition temperature; and

(iv) after steps (ii) and (iii) have been performed, reducing the effective temperature of the rubbery material below the transition temperature while the rubbery material is kept in the second shape and size so that the rubbery material remains in the second shape and size until subsequent application of energy to the rubbery material equivalent in result to raising its temperature to at least the transition temperature whereupon the rubbery material shrinks from the second shape and size toward the first shape and size.

31. (Amended) A condom consisting essentially of rubbery material selected from the group consisting of polybutadiene and its copolymers, trans-1,4-polybutadiene and its copolymers, [synthetic isoprene and its copolymers,] and synthetic cis-1,4-polyisoprene and its copolymers.

32. (Amended) A glove consisting essentially of rubbery material selected from the group consisting of polybutadiene and its copolymers, trans-1,4-polybutadiene and its copolymers, [synthetic isoprene and its copolymers] and synthetic cis-1,4-polyisoprene and its copolymers.

33. (Amended) [A] An oral-dental dam consisting essentially of rubbery material selected from the group consisting of polybutadiene and its copolymers, trans-1,4-polybutadiene and its copolymers, synthetic isoprene and its copolymers, and synthetic cis-1,4-polyisoprene and its copolymers.

34. (Amended) A stretchy-bandage consisting essentially of rubbery material selected from the group consisting of [polybutadiene and its copolymers,] trans-1,4-polybutadiene and its copolymers, synthetic isoprene and its copolymers, and synthetic cis-1,4-polyisoprene and its copolymers.

37. (Amended) A catheter consisting essentially of rubbery material selected from the group consisting of polybutadiene and its copolymers, trans-1,4-polybutadiene and its copolymers, [synthetic isoprene and its copolymers,] and synthetic cis-1,4-polyisoprene and its copolymers.

38. (Amended) A tourniquet consisting essentially of rubbery material selected from the group consisting of polybutadiene and its copolymers, trans-1,4-polybutadiene and its copolymers, [synthetic isoprene and its copolymers,] and synthetic cis-1,4-polyisoprene and its copolymers.

Please add the following new claims 42-57:

--42. The rubbery material as claimed in claim 1 wherein said substance comprises polyurethane elastomers and their copolymers.

43. The rubbery material as claimed in claim 1 wherein said substance comprises trans pentenamer and its copolymers.

44. The rubbery material as claimed in claim 1 wherein said substance comprises ethylene pimelate and its copolymers.

45. The rubbery material as claimed in claim 1 wherein said substance comprises trans-1,4-polybutadiene and its copolymers.

46. The rubbery material as claimed in claim 1 wherein said substance comprises synthetic cis-1,4-polyisoprene and its copolymers.

47. A rubbery material having a first shape and size, a second shape and size, and a transition temperature, wherein the rubbery material shrinks from the second shape and size toward the first shape and size after the application of energy to the rubbery material where the application of energy is equivalent in result to raising the rubbery material's temperature to at least the transition temperature, wherein the rubbery material is used in a condom portion of a condom-catheter.

48. A condom made by a method comprising the steps of:

- (i) manufacturing and cross-linking a rubbery material to a first shape and size, the rubbery material having a transition temperature;
- (ii) after performing step (i), applying energy to the rubbery material, where the application of energy is equivalent in result to raising the rubbery material's temperature to at least the transition temperature;
- (iii) after performing step (i), stretching the rubbery material to a second shape and size; wherein steps (ii) and (iii) are performed in such a way that the rubbery material is in a state in which it is both in the second shape and size and its effective temperature is at least the transition temperature; and

(iv) after steps (ii) and (iii) have been performed, reducing the effective temperature of the rubbery material below the transition temperature while the rubbery material is kept in the second shape and size so that the rubbery material remains in the second shape and size until subsequent application of energy to the rubbery material equivalent in result to raising its temperature to at least the transition temperature whereupon the rubbery material shrinks from the second shape and size toward the first shape and size.

49. A condom-catheter made by a method comprising the steps of:

- (i) manufacturing and cross-linking a rubbery material to a first shape and size, the rubbery material having a transition temperature;
- (ii) after performing step (i), applying energy to the rubbery material, where the application of energy is equivalent in result to raising the rubbery material's temperature to at least the transition temperature;
- (iii) after performing step (i), stretching the rubbery material to a second shape and size; wherein steps (ii) and (iii) are performed in such a way that the rubbery material is in a state in which it is both in the second shape and size and its effective temperature is at least the transition temperature; and
- (iv) after steps (ii) and (iii) have been performed, reducing the effective temperature of the rubbery material below the transition temperature while the rubbery material is kept in the second shape and size so that the rubbery material remains in the second shape and size until subsequent application of energy to the rubbery material equivalent in result to raising its temperature to at least the transition temperature whereupon the rubbery material shrinks from the second shape and size toward the first shape and size.

50. An oral-dental dam made by a method comprising the steps of:

- (i) manufacturing and cross-linking a rubbery material to a first shape and size, the rubbery material having a transition temperature;
- (ii) after performing step (i), applying energy to the rubbery material, where the application of energy is equivalent in result to raising the rubbery material's temperature to at least the transition temperature;
- (iii) after performing step (i), stretching the rubbery material to a second shape and size; wherein steps (ii) and (iii) are performed in such a way that the rubbery material is in a state in which it is both in the second shape and size and its effective temperature is at least the transition temperature; and
- (iv) after steps (ii) and (iii) have been performed, reducing the effective temperature of the rubbery material below the transition temperature while the rubbery material is kept in the second shape and size so that the rubbery material remains in the second shape and size until subsequent application of energy to the rubbery material equivalent in result to raising its temperature to at least the transition temperature whereupon the rubbery material shrinks from the second shape and size toward the first shape and size.

51. A rubber glove consisting essentially of a rubbery material having a first shape and size, a second shape and size, and a transition temperature, wherein the rubbery material shrinks from the second shape and size toward the first shape and size after application of energy to the rubbery material where the application of energy is equivalent in result to raising the rubbery material's temperature to at least the transition temperature wherein the rubbery material is a substance selected from the group consisting of polyurethane elastomers and their copolymers, trans pentenamer and

its copolymers, ethylene pimelate and its copolymers, trans-1,4-polybutadiene and its copolymers, and synthetic cis-1,4-polyisoprene and its copolymers.

52. The rubber glove as claimed in claim 51 wherein the rubbery material is a substance selected from the group consisting of trans-1,4-polybutadiene and its copolymers.

53. A method of making a rubbery article, said method comprising the steps of:

(a) providing a rubbery material, said rubbery material comprising a substance selected from the group consisting of trans pentenamer and its copolymers, ethylene pimelate and its copolymers, trans-1,4-polybutadiene and its copolymers, and synthetic cis-1,4-polyisoprene and its copolymers;

(b) manufacturing the rubbery material to a first shape and size;

(c) after step (b), cross-linking the rubbery material, the cross-linked rubbery material having a transition temperature;

(d) after step (c), applying energy to the cross-linked rubbery material, where the application of energy is equivalent in result to raising the cross-linked rubbery material's temperature to at least the transition temperature;

(e) after step (b), stretching the cross-linked rubbery material to a second shape and size, wherein steps (d) and (e) are performed in such a way that the cross-linked rubbery material is in a state in which it is both in the second shape and size and its effective temperature is at least the transition temperature; and

(f) after steps (d) and (e), reducing the effective temperature of the cross-linked rubbery material below the transition temperature while the cross-linked rubbery material is kept in the second shape and size so that the cross-linked rubbery material remains in the second shape and

size until subsequent application of energy to the cross-linked rubbery material equivalent in result to raising its temperature to at least the transition temperature whereupon the cross-linked rubbery material shrinks from the second shape and size toward the first shape and size.

54. The method as claimed in claim 53 wherein said rubbery material comprises a substance selected from the group consisting of trans-1,4-polybutadiene and its copolymers.

55. The method as claimed in claim 54 wherein said rubbery material is trans-1,4-polybutadiene.

56. A glove made according to the method of claim 36.

57. The glove as claimed in claim 32 wherein the rubbery material is trans-1,4-polybutadiene.--

REMARKS

Claims 7 and 12 have been cancelled. Claims 1-5, 16, 19, 22-26, 28, 31-34 and 37-38 have been amended. New claims 42-57 have been added. Therefore, claims 1-6, 8-11 and 13-57 are under active consideration.

If there are any fees due in connection with the filing of this paper that are not accounted for, the Examiner is authorized to charge the fees to our Deposit Account No. 11-1755. If a fee is

required for an extension of time under 37 C.F.R. 1.136 that is not accounted for already, such an extension of time is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

Kriegsman & Kriegsman

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Dated: January 16, 2001

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on _____.

Edward M. Kriegsman
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Dated: _____